Date: Tuesday. 09/09/2008 2:16:04 PM
User: Julie Escocq

Process Sheet

Customer	: CU-DAR001 Dart Helicopters Services	**Drawing Name**	: MID TUBE ASSEMBLY
Job Number	: 41749		
Estimate Number	: 10469		
P.O. Number	:	**Part Number**	: D3391023
This Issue	: 09/09/2008 **S.O. No.** :	**Drawing Number**	: D3391 REV G
Prsht Rev.	: NC	**Project Number**	: N/A
First Issue	: / / **Type** : SKIDTUBES	**Drawing Revision**	: G
Previous Run	: 41748	**Material**	:
Written By	:	**Due Date**	: 20/09/2008 **Qty:** 1 **Um:** Each
Checked & Approved By	: JD 08.9.09		

Comment : Est. A 05.10.20 New Issue KJ/EC
Est. B 06.02.10 ECN773 dwg rev.D EC
est C 07.03.20 rev F dwg EC
est D 07.03.28 re-format EC
est E 07.10.31 ecn 1053P EC
Est Rev:F ECN 1056 07-11-13 DD verified by: EC
Est Rev:G 08-09-08 new process (ecn 08-510) DD verified by:EC

Additional Product

Job Number:

Seq. #:	Machine Or Operation:	Description :
1.0	D25001100	Skidtube Extrusion

Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)
SKIDTUBE EXTRUSION
Pick:

Qty	Part Number	Description	Batch
1	D2500-1-100	Extrusion	B 37065

JH

2.0	D3391021	Fwd Tube Assembly

Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)
Fwd Tube Assembly
Batch: B41273 JD 7-10-22

3.0	SKIDTUBES 1	SKIDTUBESS RESOURCE 1

Comment: LANDING GEAR RESOURCE 1
1-Cut tube to finish length as per Dwg D3391

2-Identify as D3391-023

3-Drill pilot holes using DT8796 (Do not drill "B" holes) and drill only 1 fwd saddle hole on one side only as per Dwg D3391

JD 8-9-11

4-Open saddles and GHW holes to Ø0.375" exept for fwd saddle hole of detail "J"

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	**STEP**	**PROCEDURE CHANGE**	**By**	**Date**	**Qty**	**Approval** Chief Eng / Prod Mgr	**Approval** QC Inspector

Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR:** Yes No **DQA:** _____ **Date:** _____

Resolution: _____ **Disposition:** _____ **QA: N/C Closed:** _____ **Date:** _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	**STEP**	**Description of NC** Section A	**Corrective Action** Section B			**Verification** Section C	**Approval** Chief Eng	**Approval** QC Inspector
			Initial Chief Eng	**Action Description** Chief Eng	**Sign & Date**			

NOTE: Date & initial all entries

Date: Tuesday, 09/09/2008 2:16:04 PM
User: Julie Lecocq

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services **Drawing Name:** MID TUBE ASSEMBLY

Job Number: 41749 **Part Number:** D3391023

Job Number:

Seq. #:	Machine Or Operation:	Description :

5-Remove .030" from Fwd indexing Ridge as per Dwg D3391

6-Remove indexing ridge on Fwd & Aft end of skidtube as per Dwg D3391

7-Deburr

8-Drill #30 pilot holes using wearplate Jig DT8217 Identify Ø0.250" holes with paint marker,

9-Open wearplate holes of D3391-023 assembly detail section G-G to Ø0.250" (14 holes) as per Dwg D3391 and 2 holes in section Detail "J", do not open wearplate holes of section "J"

10-Open wearplate holes of D3391-023 assembly detail section H-H to Ø0.297" (20 holes) as per Dwg D3391

11-Open .375" holes to .438" ***do not open fwd saddle holes***

12-Locate D3391-021 in D3391-023 at 9.00" (see view z-z)

13- Transfer drill one fwd saddle hole only to .188" dia, transfer drill all remaining fwd saddle holes using DT 8149 locating from previusly drill .188" dia hole, using t-pins and clicos to ensure perfect allingment, open up previusly tranfer drilled pilot holes in D3391-023/-021 to 0.438" dia. in D3391-021

14- Transfer drill 2 wearplate holes into D3391-021 using DT8217, locating from two previusly drilled holes, drill remaining wearplate holes into D3391-021.

15- Locating from two fwd wearplate holes drilol remaining 6 wearplte holes in D3391-021 using DT8937

16- Open 2 fwd wearplate holes in D3391-023 to .250" dia.

17- Open 12 wearplate holes in D3391-021 to 0.297" dia.

18-Deburr and blow out all chips from inside tube

4.0	QC5	INSPECT WORK TO CURRENT STEP	

Comment: INSPECT WORK TO CURRENT STEP

5.0	HAND FINISHING1	HAND FINISHING RESOURCE #1	

Comment: HAND FINISHING RESOURCE #1
Chemical Conversion Coat as per QSI 005 4.1

Form: rprocess

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: D3391-023 PAR #: N/A Fault Category: Press - Stretchers NCR: (Yes) No DQA: [signature] Date: 08-11-13

Resolution: Accepted Disposition: Use as is QA: N/C Closed: [signature] Date: 08/11/20

NCR: 41749		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B: Initial Chief Eng	Action Description Chief Eng	Sign & Date	Verification Section C	Approval Chief Eng	Approval QC Inspector
08-09-23	3.6	The inner indexing ridge was remove up to .800" from the end, at each end of the tube. Should be .700" per dwg. R.C: Employee was trained, Lack of Attention.	QS/08/12	- Part is acceptable per attached e-mail. - Re-train employee & add the re-train to the employee's Job training sheet, And practice on sample pieces.	JD 8-9-23	08/10/23	QS/08/12	08-09-23

NOTE: Date & initial all entries

Date: Tuesday, 09/09/2008 2:16:04 PM
User: Julie Lecocq

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services **Drawing Name:** MID TUBE ASSEMBLY

Job Number: 41749 **Part Number:** D3391023

Job Number:

Seq. #:	Machine Or Operation:	Description :
6.0	QC3	INSPECT POWDER COAT/CHEMICAL CONVERSION

Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION M 8-10-23

7.0 D33891 Web

Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)
WEB
Pick:

Qty	Part Number	Description	Batch
1	D3389-1	Web	B41833
A/R		Sikaflex-241/-291	M109338
		Sikaflex expire date:	8-11-1

Start: 8-10-23 Time: 7:35
Finish: 8/10/24 Time: 7:05 AM

M 8-10-23

8.0 SKIDTUBES 1 SKIDTUBESS RESOURCE 1

Comment: LANDING GEAR RESOURCE 1

1-Open float bag holes as per dwg

2-C'sink float bag holes as per dwg

3- Prepare tube for welding

4-Bond web in place as per Dwg D3391 & QSI 015. Adhere for 12 hours)

M 8-10-23

9.0 QC5 INSPECT WORK TO CURRENT STEP

Comment: INSPECT WORK TO CURRENT STEP 8/10/24 80

10.0 D36811 Spacer

Comment: Qty.: 5.0000 Each(s)/Unit Total : 5.0000 Each(s)
SPACER
batch: B41248 M 8-10-24 (5)

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	**STEP**	**PROCEDURE CHANGE**	**By**	**Date**	**Qty**	**Approval** Chief Eng / Prod Mgr	**Approval** QC Inspector

Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR:** Yes No **DQA:** _____ **Date:** _____

Resolution: _____ **Disposition:** _____ **QA: N/C Closed:** _____ **Date:** _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	**STEP**	**Description of NC** Section A	**Corrective Action** Section B			**Verification** Section C	**Approval** Chief Eng	**Approval** QC Inspector
			Initial Chief Eng	**Action Description** Chief Eng	**Sign & Date**			

NOTE: Date & initial all entries

Date: Tuesday, 09/09/2008 2:16:04 PM
User: Julie Lecocq

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services **Drawing Name:** MID TUBE ASSEMBLY

Job Number: 41749 **Part Number:** D3391023

Job Number:

Seq. #:	Machine Or Operation:	Description :
11.0	SKIDTUBES 1	SKIDTUBESS RESOURCE 1

Comment: LANDING GEAR RESOURCE 1 A/R M109213
Weld crossbolt spacer as per dwg D3391 & QSI 004 RF 08/10/27

12.0	QC10	VISUAL INSPECTION OF GROUND WELDS

Comment: VISUAL INSPECTION OF GROUND WELDS S 08/10/28 (RD)

13.0	QC5	INSPECT WORK TO CURRENT STEP

Comment: INSPECT WORK TO CURRENT STEP S 08/10/28 (RD)

14.0	POWDER COATING	POWDER COATING

M109152 (IX)

Comment: POWDER COATING
Powder Coat White Gloss (Ref: 4.3.5.1) as per QSI 005 4.3

START TIME: 8-50
OVEN TEMPERATURE: 320 °F
FINISH TIME: 9-20

M-1 08/10/30

15.0	QC3	INSPECT POWDER COAT/CHEMICAL CONVERSION

MD

Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION 08-11-03

16.0	D35911	Bushing

Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)
Bushing B41140 8-11-3

17.0	SKIDTUBES 1	SKIDTUBESS RESOURCE 1

Comment: SKIDTUBESS RESOURCE 1
1- insert D3391-021 into D3391-23

2- insert T-pins into first and third fwd saddle holes

3- ON FIRST SIDE ONLY drill out 2nd and forth fwd saddles holes to 0.500" as per DSI 9364

4- remove T-pins and locate DT9415 from first and third crossbolt hole using T-pins and clekos

5- ON 2ND SIDE ONLY ream out 2nd and forth saddle hole to 0.499". Remove DT9415

8-11-3

Form: rprocess

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	**STEP**	**PROCEDURE CHANGE**	**By**	**Date**	**Qty**	**Approval** Chief Eng / Prod Mgr	**Approval** QC Inspector

Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR:** Yes No **DQA:** _____ **Date:** _____

Resolution: _____ **Disposition:** _____ **QA: N/C Closed:** _____ **Date:** _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	**STEP**	**Description of NC** Section A	**Corrective Action** Section B			**Verification** Section C	**Approval** Chief Eng	**Approval** QC Inspector
			Initial Chief Eng	**Action Description** Chief Eng	**Sign & Date**			

NOTE: Date & initial all entries

Date: Tuesday, 09/09/2008 2:16:04 PM
User: Julie Lecocq

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services **Drawing Name:** MID TUBE ASSEMBLY

Job Number: 41749 **Part Number:** D3391023

Job Number:

Seq. #:	Machine Or Operation:	Description :
		6- deburr, re-alodine and blow out chips 7- press fit D3591-1 spacers using DT9416 starting from 0.500" side

DP FL 8-11-3

18.0	QC5	INSPECT WORK TO CURRENT STEP

Comment: INSPECT WORK TO CURRENT STEP : S 08/4/05 (x1)

19.0	ALS41032130	Insert

Comment: Qty.: 22.0000 Each(s)/Unit Total : 22.0000 Each(s)
INSERT
batch: M105814
or equivalent
per QSI 017 : AS

20.0	ALS41032225	Insert

Comment: Qty.: 10.0000 Each(s)/Unit Total : 10.0000 Each(s)
INSERT
batch:_____
or equivalent
per QSI 017

21.0	HAND FINISHING1	HAND FINISHING RESOURCE #1

Comment: HAND FINISHING RESOURCE #1
Install Inserts as per Dwg MP 08-11-05 (x1)

22.0	QC5	INSPECT WORK TO CURRENT STEP

Comment: INSPECT WORK TO CURRENT STEP S 08/4/05 (x1)

23.0	D3401041	Tow Cap Assembly

Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)
Tow Cap Assembly
Pick:

Qty	Part Number	Description	Batch
1	D3401-041	Tow Cap	_____

not installed on mid tube
n/a S 8/11/5
All ready changed

Form: rprocess

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	**STEP**	**PROCEDURE CHANGE**	**By**	**Date**	**Qty**	**Approval** Chief Eng / Prod Mgr	**Approval** QC Inspector

Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR:** Yes No **DQA:** _____ **Date:** _____

Resolution: _____ **Disposition:** _____ **QA: N/C Closed:** _____ **Date:** _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	**STEP**	**Description of NC** Section A	**Corrective Action** Section B			**Verification** Section C	**Approval** Chief Eng	**Approval** QC Inspector
			Initial Chief Eng	**Action Description** Chief Eng	**Sign & Date**			

NOTE: Date & initial all entries

Date: Tuesday, 09/09/2008 2:16:04 PM
User: Julie Lecocq

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services **Drawing Name:** MID TUBE ASSEMBLY

Job Number: 41749 **Part Number:** D3391023

Job Number:

Seq. #:	Machine Or Operation:	Description :
24.0	D356413	Wearshoe
	Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s) WEARSHOE	
25.0	D356613	Gasket
	Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s) GASKET	
26.0	D36721	Phenolic Washer
	Comment: Qty.: 4.0000 Each(s)/Unit Total : 4.0000 Each(s) PHENOLIC WASHER	
27.0	AN3C4A	BOLT
	Comment: Qty.: 10.0000 Each(s)/Unit Total : 10.0000 Each(s) Bolt Pick: Qty Part Number Description Batch 4 AN3C4A Bolt	
28.0	AN960C10L	washer
	Comment: Qty.: 10.0000 Each(s)/Unit Total : 10.0000 Each(s) washer	
29.0	HAND FINISHING1	HAND FINISHING RESOURCE #1
	Comment: SMALL & MEDIUM FAB RESOURCE 1 Install tow Cap as per Dwg D3391 Identify as D3391-021	
30.0	QC5	INSPECT WORK TO CURRENT STEP
	Comment: INSPECT WORK TO CURRENT STEP Inspect thread of each insert using DT8821	

Form: rprocess

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	**STEP**	**PROCEDURE CHANGE**	**By**	**Date**	**Qty**	**Approval** Chief Eng / Prod Mgr	**Approval** QC Inspector

Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR:** Yes No **DQA:** _____ **Date:** _____

Resolution: _____ **Disposition:** _____ **QA: N/C Closed:** _____ **Date:** _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	**STEP**	**Description of NC** Section A	**Corrective Action** Section B			**Verification** Section C	**Approval** Chief Eng	**Approval** QC Inspector
			Initial Chief Eng	**Action Description** Chief Eng	**Sign & Date**			

NOTE: Date & initial all entries

Date: Tuesday, 09/09/2008 2:16:04 PM
User: Julie Lecocq

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services **Drawing Name:** MID TUBE ASSEMBLY

Job Number: 41749 **Part Number:** D3391023

Job Number:

Seq. #:	Machine Or Operation:	Description :
31.0	PACKAGING 1	PACKAGING RESOURCE #1

Comment: PACKAGING RESOURCE #1
Identify and Stock
Location: PPP 4/683 L 8/11 7C

32.0	QC21	FINAL INSPECTION/W/O RELEASE

08/11/13 JJ

Comment: FINAL INSPECTION/W/O RELEASE

Job Completion

U 08.11.13

Form: rprocess

Dart Aerospace Ltd

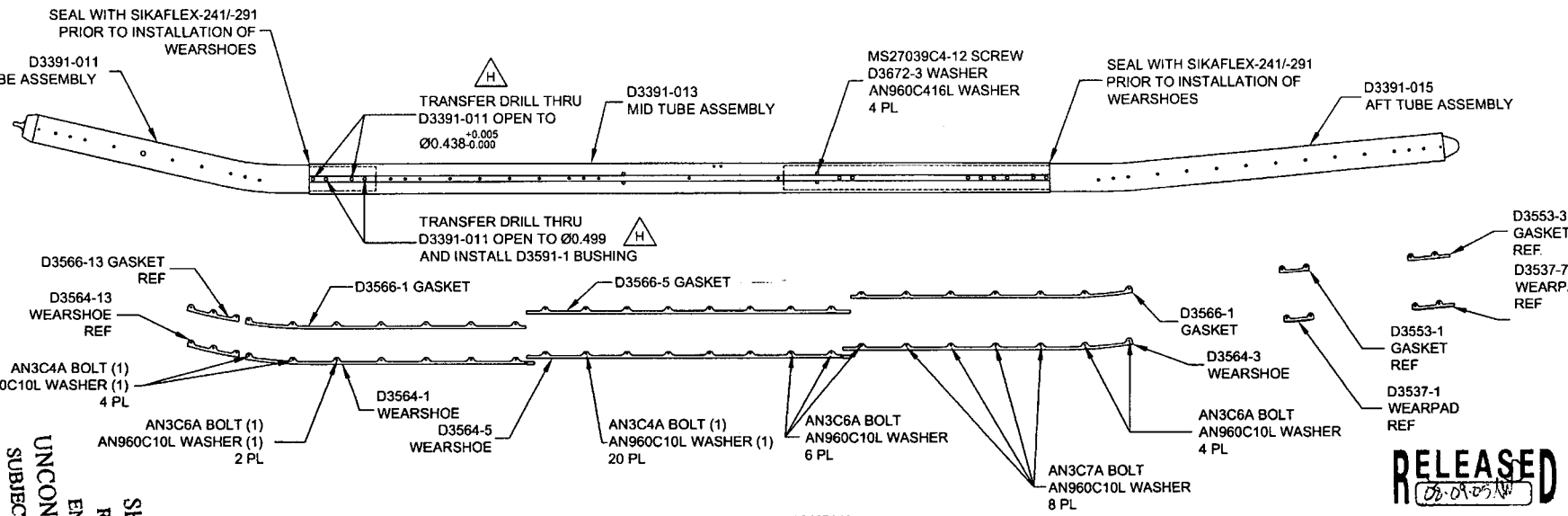
W/O:		WORK ORDER CHANGES					
DATE	**STEP**	**PROCEDURE CHANGE**	**By**	**Date**	**Qty**	**Approval** Chief Eng / Prod Mgr	**Approval** QC Inspector

Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR:** Yes No **DQA:** _____ **Date:** _____

Resolution: _____ **Disposition:** _____ **QA: N/C Closed:** _____ **Date:** _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	**STEP**	**Description of NC** Section A	**Corrective Action** Section B			**Verification** Section C	**Approval** Chief Eng	**Approval** QC Inspector
			Initial Chief Eng	**Action Description** Chief Eng	**Sign & Date**			

NOTE: Date & initial all entries



RELEASED
08.09.05

D3391-041 ASSEMBLY

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER NO.

D3391-041 FLOAT SKIDTUBE ASSEMBLY PARTS LIST

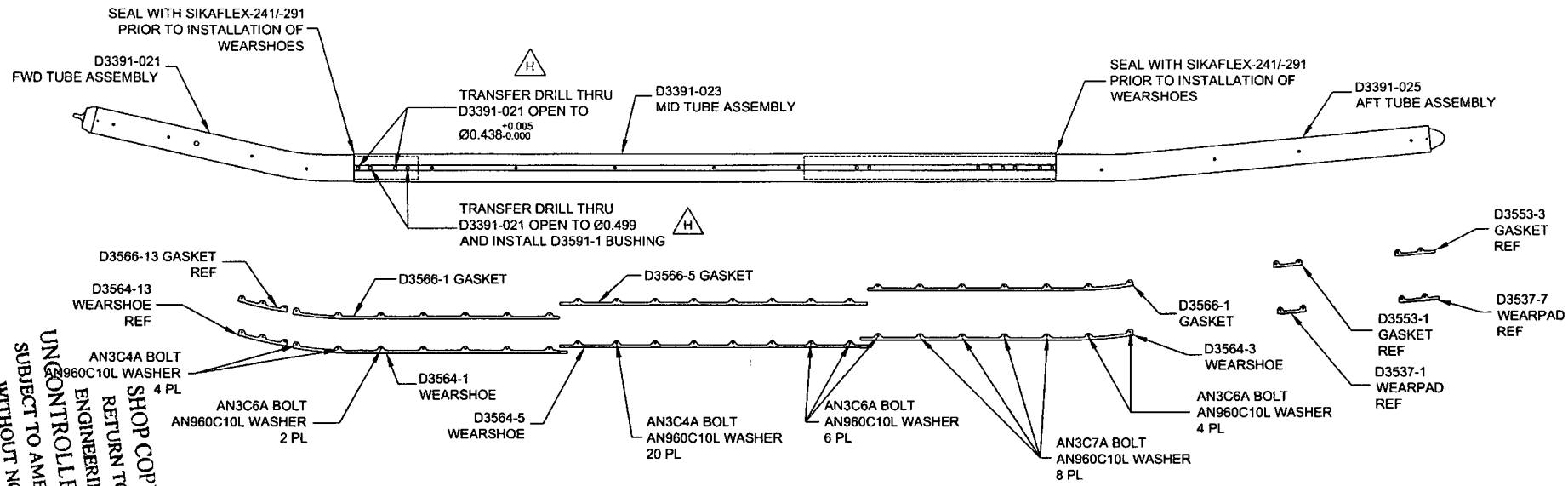
QTY -041	PART NUMBER	DESCRIPTION
X	D3391-041	FLOAT SKIDTUBE ASSEMBLY
1	D3391-011	FWD TUBE ASSEMBLY
1	D3391-013	MID TUBE ASSEMBLY
1	D3391-015	AFT TUBE ASSEMBLY
1	D3564-1	WEARSHOE
1	D3564-3	WEARSHOE
1	D3564-5	WEARSHOE
2	D3566-1	GASKET
1	D3566-5	GASKET
2	D3591-1	BUSHING
4	D3672-3	WASHER
24	AN3C4A	BOLT
12	AN3C6A	BOLT
8	AN3C7A	BOLT
44	AN960C10L	WASHER
4	MS27039C4-12	SCREW
4	AN960C416L	WASHER

GENERAL NOTES

1) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
POWDER COAT WHITE (4.3.5.1) PER DART QSI 005 4.3
2) SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES "LPS-3" AFTER FINISH AND AFTER INSTALLATION OF INSERTS. COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY, CLEAN EXCESS OFF POWDER COATING WITH MEK DEGREASER.
3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
4) UNITS: INCHES UNLESS OTHERWISE NOTED
5) USE DART DRILL TEMPLATE DT8217 TO LOCATE AND DRILL Ø0.297 SIZE HOLES FOR WEARSHOE INSERTS. C'BORE AS NOTED AND INSTALL INSERTS EXCEPT WHERE INDICATED.

REV.	DESCRIPTION	BY	DATE
H	DRAWING UPDATED TO CURRENT STANDARDS. SHT 1 PL ADDED D3591-1 BUSHING. ZN C6 Ø0.438 DIM WAS 4 PL. ADDED Ø0.499 DIM AND D3591-1 BUSHING. SHT 2 PL ADDED D3591-1 BUSHING. ZN C6 Ø0.438 DIM WAS 4 PL. ADDED Ø0.499 DIM AND D3591-1 BUSHING. (FOR FURTHER INFO SEE DSI 9364 & NCR 08-074)	AJS	08.08.20
G	REPLACE NAS INSERTS W/ AELS INSERTS SWITCH TO D3670-XXXX SPACERS FOR INSTALLING FLOAT BAGS, DWG REORGANIZED FOR CLARITY	DC	07.07.31
F	ADD SS WEARSHOE, GASKET REMOVE FWD SADDLE HOLE -011/-021	PH	07.01.18
E	CHANGE TOLERANCE, EASE MANUFACTURE	PH	06.04.25
D	UPDATE TOLERANCE, CHANGE HOLE SIZE	PH	06.01.23
C	LENGTHEN AFT EXTENSION	PH	05.09.27
B	DRAWING UPDATES	PH	05.06.10
A	NEW ISSUE	PH	05.02.07

DESIGN	PH	**DART AEROSPACE USA, INC** PORT HADLOCK, WA
DRAWN	AJS	
CHECKED		DRAWING NO. D3391 REV. H
MFG. APPR.		SHEET 1 OF 8
APPROVED		TITLE 412 FLOAT SKIDTUBE
DE APPR.		SCALE NTS
DATE	08.08.20	



D3391-043 ASSEMBLY

UNCONTROLLED COPY
SUBJECT TO AMENDMENT WITHOUT NOTICE
ENGINEERING RETURN TO SHOP COPY
NO. 1 WORK ORDER

D3391-043 FLOAT SKIDTUBE ASSEMBLY PARTS LIST

QTY -043	PART NUMBER	DESCRIPTION
X	D3391-043	FLOAT SKIDTUBE ASSEMBLY
1	D3391-021	FWD TUBE ASSEMBLY
1	D3391-023	MID TUBE ASSEMBLY
1	D3391-025	AFT TUBE ASSEMBLY
1	D3564-1	WEARSHOE
1	D3564-3	WEARSHOE
1	D3564-5	WEARSHOE
2	D3566-1	GASKET
1	D3566-5	GASKET
2	D3591-1	BUSHING
24	AN3C4A	BOLT
12	AN3C6A	BOLT
8	AN3C7A	BOLT
44	AN960C10L	WASHER

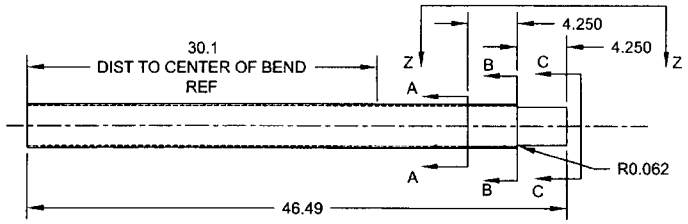
H

GENERAL NOTES

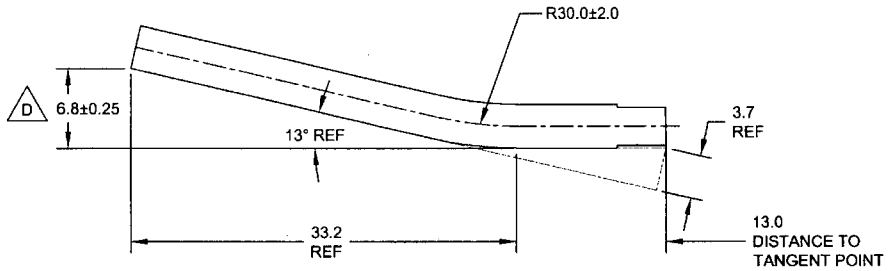
1) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
POWDER COAT WHITE (4.3.5.1) PER DART QSI 005 4.3
2) SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES "LPS-3" AFTER FINISH AND AFTER INSTALLATION OF INSERTS. COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY, CLEAN EXCESS OFF POWDER COATING WITH MEK DEGREASER.
3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
4) UNITS: INCHES UNLESS OTHERWISE NOTED
5) USE DART DRILL TEMPLATE DT8217 TO LOCATE AND DRILL Ø0.297 SIZE HOLES FOR WEARSHOE INSERTS. C'BORE AS NOTED AND INSTALL INSERTS EXCEPT WHERE INDICATED.

RELEASED
08.09.2020

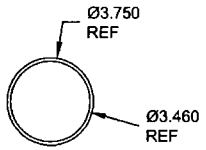
DESIGN	PH	**DART AEROSPACE USA, INC**	
DRAWN	AUS	PORT HADLOCK, WA	
CHECKED		DRAWING NO.	REV. H
MFG. APPR.		D3391	SHEET 2 OF 8
APPROVED		TITLE	SCALE
DE APPR.		412 FLOAT SKIDTUBE	NTS
DATE	08.08.20		



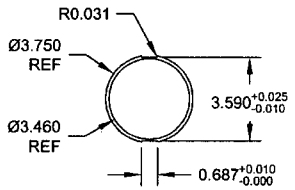
D3391-1 CUTTING DETAIL
(MAKE FROM D6013-047 SKIDTUBE MATERIAL)



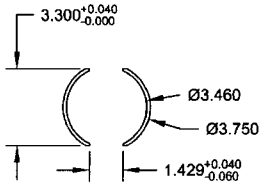
D3391-011/-021 BENDING DETAIL
(MAKE FROM D3391-1)



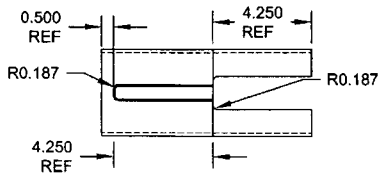
SECTION A-A
SCALE 2X



SECTION B-B
SCALE 2X



SECTION C-C
SCALE 2X



VIEW Z-Z
SCALE 2X

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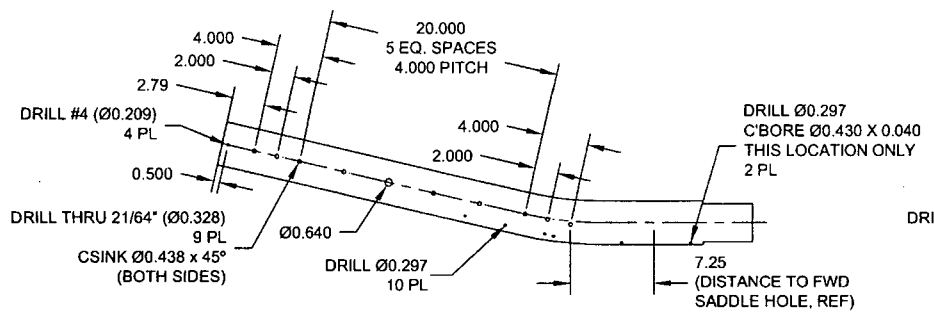
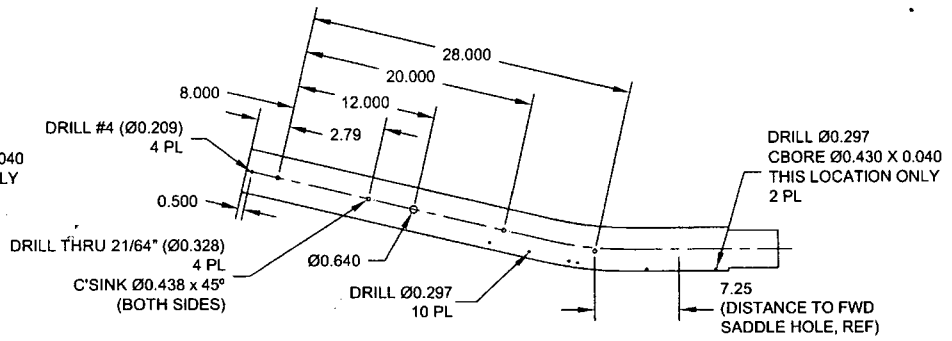
WORK ORDER
NO. 41762

RELEASED
08.19.05 AW

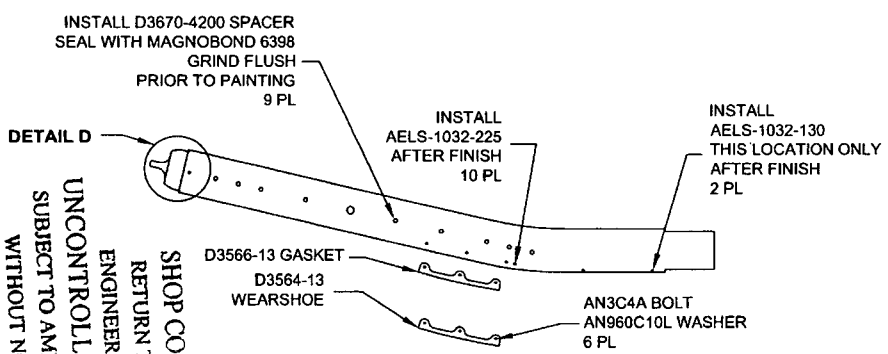
DESIGN	PH	**DART AEROSPACE USA, INC** PORT HADLOCK, WA
DRAWN	AUS	
CHECKED		DRAWING NO. D3391 — REV. H — SHEET 3 OF 8
MFG. APPR.		
APPROVED		TITLE: 412 FLOAT SKIDTUBE — SCALE: NTS
DE APPR.		
DATE	08.08.20	



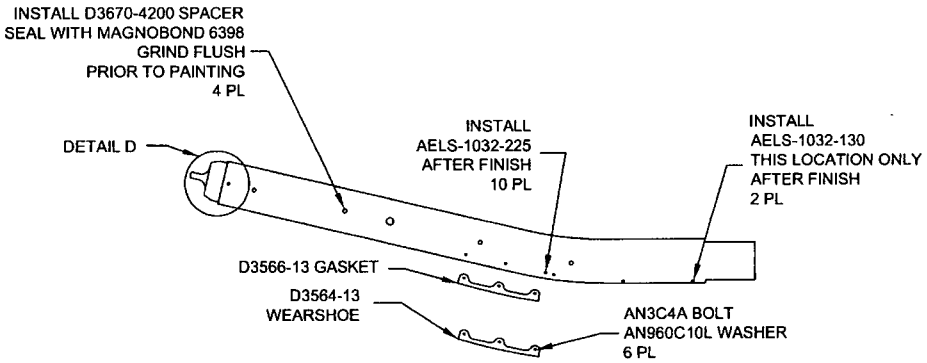
D3391-011 DRILLING DETAIL



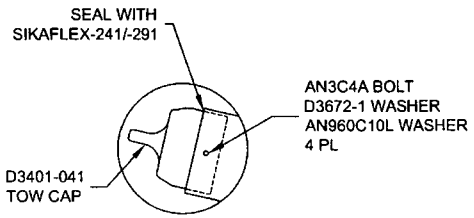
D3391-021 DRILLING DETAIL



D3391-011 ASSEMBLY DETAIL



D3391-021 ASSEMBLY DETAIL



DETAIL D
SCALE 2X

D3391-011/-021 FWD TUBE ASSEMBLY PARTS LIST

QTY - 011	QTY - 021	PART NUMBER	DESCRIPTION
X		D3391-011	FWD TUBE ASSEMBLY
	X	D3391-021	FWD TUBE ASSEMBLY
1	1	D6013-047	FWD TUBE
1	1	D3401-041	TOW CAP
1	1	D3564-13	WEARSHOE
1	1	D3566-13	GASKET
9	4	D3670-4200	SPACER
4	4	D3672-1	WASHER
10	10	AN3C4A	BOLT
10	10	AN960C10L	WASHER
2	2	AELS-1032-130	INSERT
10	10	AELS-1032-225	INSERT

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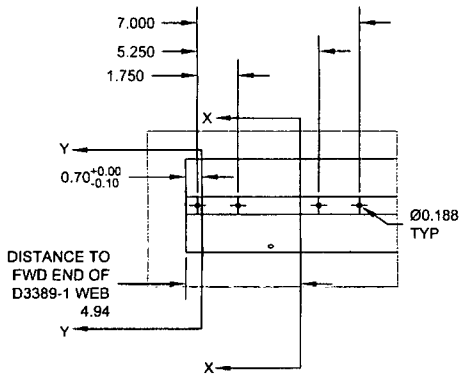
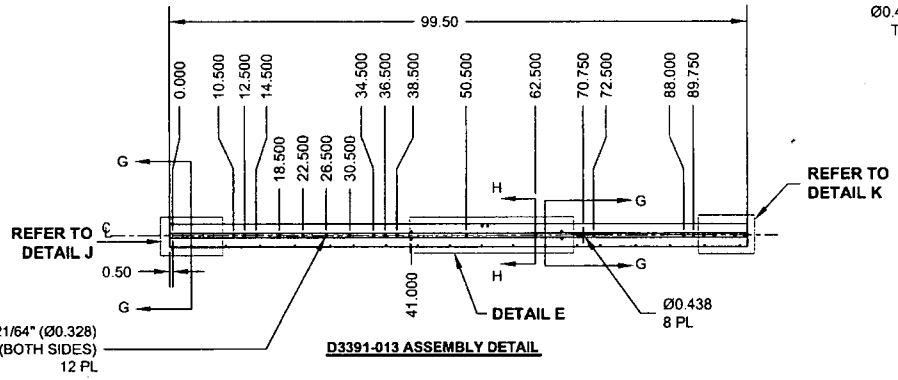
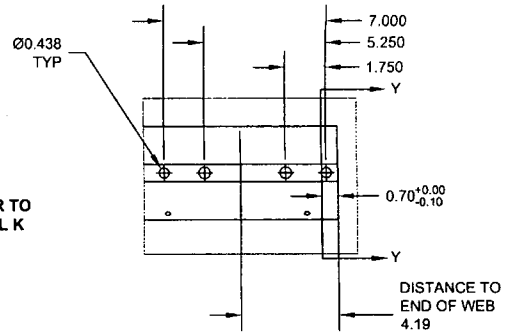
DESIGN	PH	**DART AEROSPACE USA, INC** PORT HADLOCK, WA
DRAWN	AJS	
CHECKED		DRAWING NO. D3391 — REV. H — SHEET 4 OF 8
MFG. APPR.		
APPROVED		TITLE: 412 FLOAT SKIDTUBE — SCALE: NTS
DE APPR.		
DATE	08.08.20	



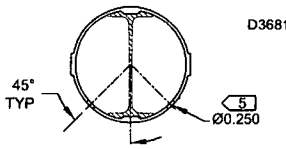
DETAIL J
SCALE 4X



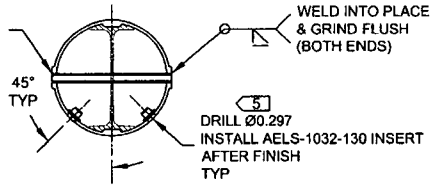
D3391-013 ASSEMBLY DETAIL



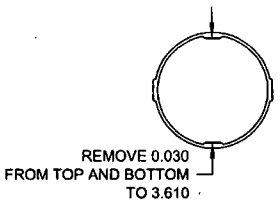
DETAIL K
SCALE 4X



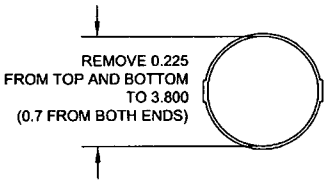
SECTION G-G
SCALE 5X



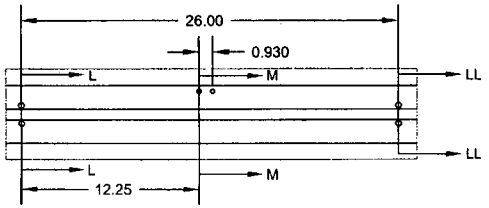
SECTION H-H 12 PL
SCALE 5X



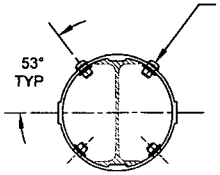
SECTION X-X
SCALE 5X



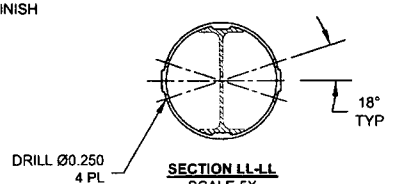
SECTION Y-Y
SCALE 5X



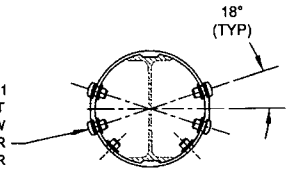
DETAIL E
SCALE NONE



SECTION M-M
SCALE 5X



SECTION LL-LL
SCALE 5X



SECTION L-L
SCALE 5X

D3391-013 MID TUBE ASSEMBLY PARTS LIST

QTY -013	PART NUMBER	DESCRIPTION
X	D3391-013	MID TUBE ASSEMBLY
1	D2500-1-100	EXTRUSION
1	D3389-1	WEB
4	D3672-1	WASHER
4	D3672-3	WASHER
12	D3681-1	SPACER
24	AELS-1032-130	INSERT
4	ALS4-428-165	INSERT
4	AN960C10L	WASHER
4	AN960C416L	WASHER
4	MS27039C1-09	SCREW
4	MS27039C4-08	SCREW

D3391-013 MID TUBE ASSEMBLY

1) MATERIAL: MAKE FROM D2500-1-100 EXTRUSION
2) INSTALL D3389-1 WEB TO OUTER TUBE USING SIKAFLEX-241/-291 PER QSI 015
3) WELDING: PER DART QSI 004

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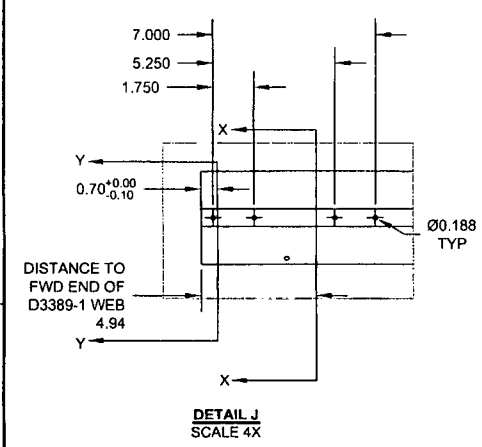
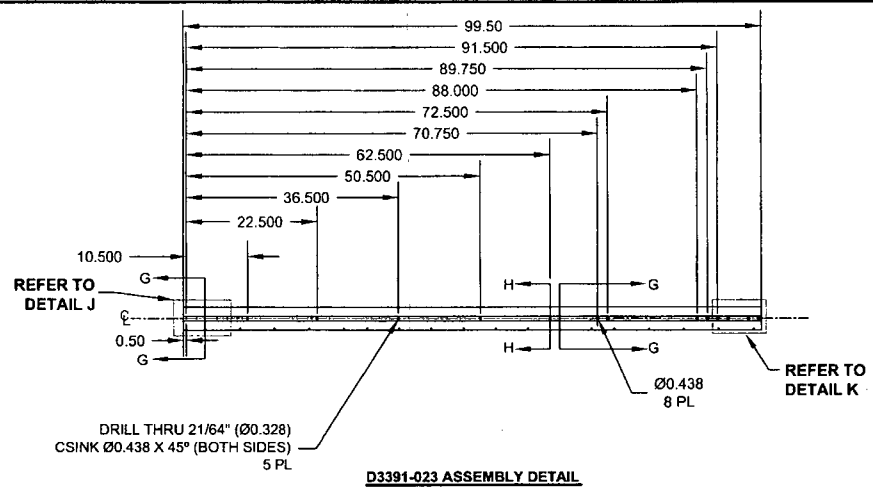
08.29.20

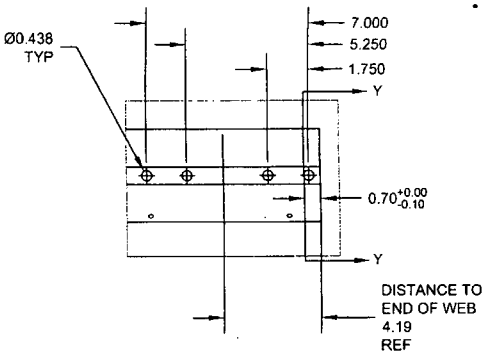
DESIGN	PH	**DART AEROSPACE USA, INC** PORT HADLOCK, WA
DRAWN	AJS	
CHECKED		DRAWING NO. D3391 REV. H
MFG. APPR.		SHEET 5 OF 8
APPROVED		TITLE 412 FLOAT SKIDTUBE SCALE NTS
DE APPR.		
DATE	08.08.20	



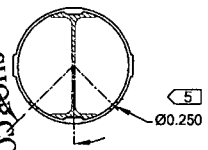
DETAIL J
SCALE 4X



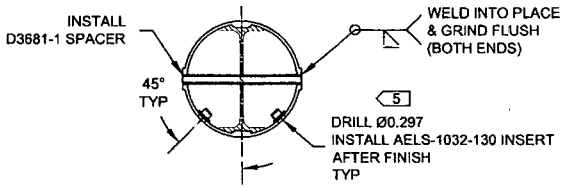
D3391-023 ASSEMBLY DETAIL



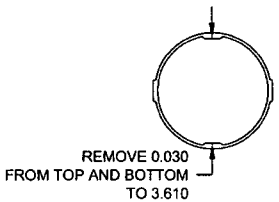
DETAIL K
SCALE 4X



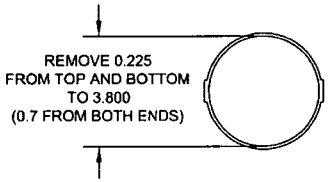
SECTION G-G
SCALE 5X



SECTION H-H 5 PL
SCALE 5X



SECTION X-X
SCALE 5X



SECTION Y-Y
SCALE 5X

D3391-023 MID TUBE ASSEMBLY PARTS LIST

QTY - 023	PART NUMBER	DESCRIPTION
X	D3391-023	MID TUBE ASSEMBLY
1	D2500-1-100	EXTRUSION
1	D3389-1	WEB
5	D3681-1	SPACER
20	AELS-1032-130	INSERT

D3391-023 MID TUBE ASSEMBLY

1) MATERIAL: MAKE FROM D2500-1-100 EXTRUSION
2) INSTALL D3389-1 WEB TO OUTER TUBE USING SIKAFLEX-241/-291 PER QSI 015
3) WELDING: PER DART QSI 004

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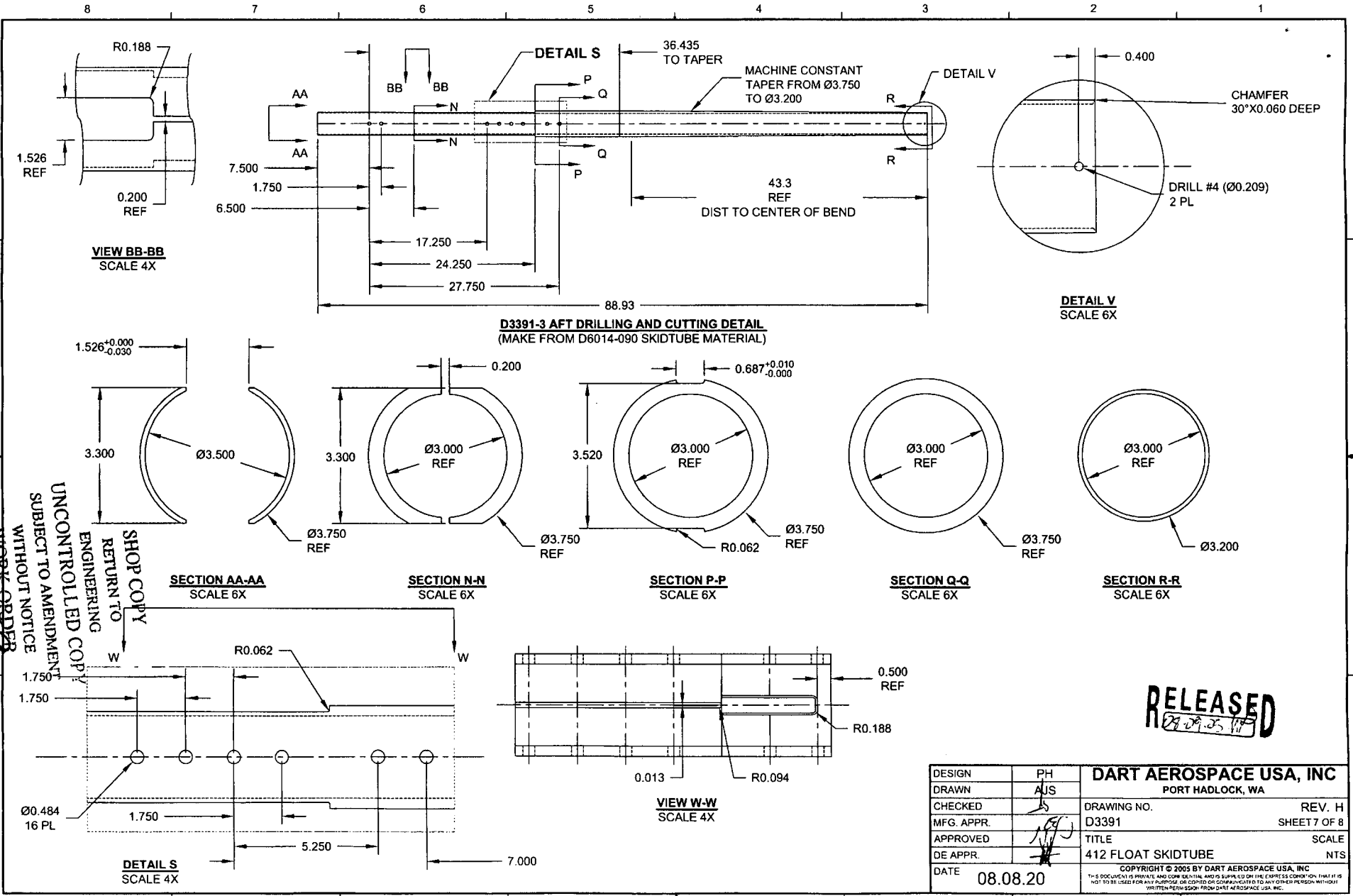
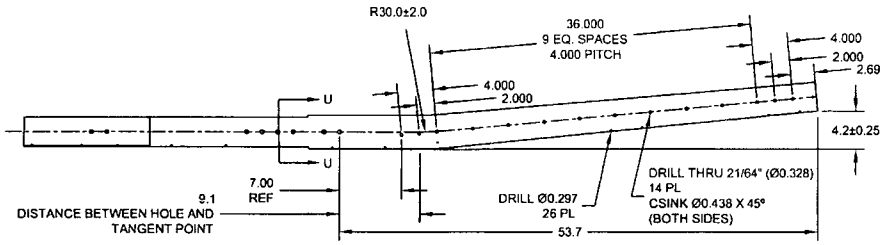
08-24-20 14

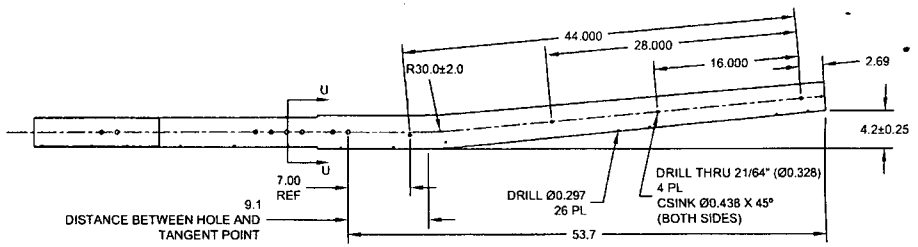
DESIGN	PH	**DART AEROSPACE USA, INC** PORT HADLOCK, WA
DRAWN	AAS	
CHECKED		DRAWING NO. D3391 — REV. H — SHEET 6 OF 8
MFG. APPR.		
APPROVED		TITLE: 412 FLOAT SKIDTUBE — SCALE: NTS
DE APPR.		
DATE	08.08.20	



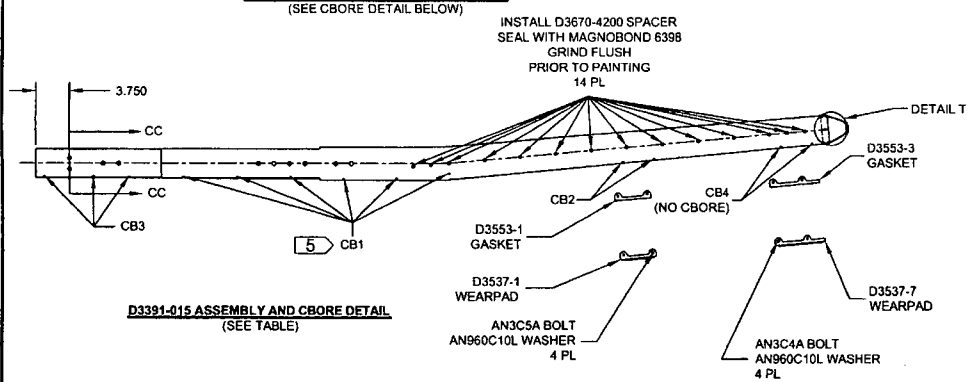
DESIGN	PH	**DART AEROSPACE USA, INC** PORT HADLOCK, WA
DRAWN	AJS	
CHECKED		DRAWING NO. D3391 — REV. H — SHEET 7 OF 8
MFG. APPR.		
APPROVED		TITLE: 412 FLOAT SKIDTUBE — SCALE: NTS
DE APPR.		
DATE	08.08.20	



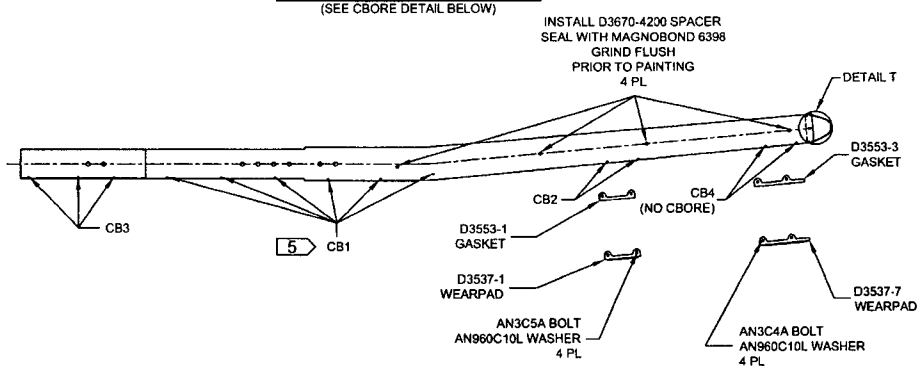
D3391-015 BENDING AND DRILLING DETAIL
(SEE CBORE DETAIL BELOW)



D3391-025 BENDING AND DRILLING DETAIL
(SEE CBORE DETAIL BELOW)



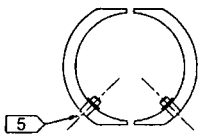
D3391-015 ASSEMBLY AND CBORE DETAIL
(SEE TABLE)



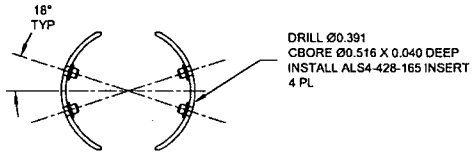
D3391-025 ASSEMBLY AND CBORE DETAIL
(SEE TABLE)

D3391-015/-025 AFT TUBE ASSEMBLY PARTS LIST

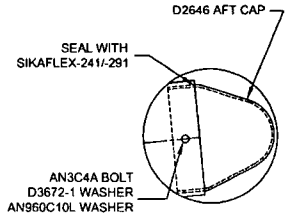
QTY - 015	QTY - 025	PART NUMBER	DESCRIPTION
X		D3391-015	AFT TUBE ASSEMBLY
	X	D3391-025	AFT TUBE ASSEMBLY
1	1	D6014-090	AFT TUBE
1	1	D2646	AFT CAP
1	1	D3537-1	WEARPAD
1	1	D3537-7	WEARPAD
1	1	D3553-1	GASKET
1	1	D3553-3	GASKET
14	4	D3670-4200	SPACER
2	2	D3672-1	WASHER
14	14	AELS-1032-130	INSERT
12	12	AELS-1032-225	INSERT
4		ALS4-428-165	INSERT
6	6	AN3C4A	BOLT
4	4	AN3C5A	BOLT
10	10	AN960C10L	WASHER



SECTION U-U
SCALE 3X



SECTION CC-CC
SCALE 3X



DETAIL T
SCALE 4X

C'BORE HOLES MARKED CB1-CB4 AS FOLLOWS AND
INSTALL AELS-1032-XXX AFTER FINISH AS NOTED

HOLES MARKED	QTY D3391-015	QTY D3391-025	CBORE	P/N
CB1	12	12	Ø0.430 X 0.170	AELS-1032-225
CB2	4	4	Ø0.430 X 0.170	AELS-1032-130
CB3	6	6	Ø0.430 X 0.040	AELS-1032-130
CB4	4	4	NONE	AELS-1032-130

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08.09.05

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DESIGN	PH	**DART AEROSPACE USA, INC** PORT HADLOCK, WA
DRAWN	AJS	
CHECKED		DRAWING NO. D3391 — REV. H — SHEET 8 OF 8
MFG. APPR.		
APPROVED		TITLE: 412 FLOAT SKIDTUBE — SCALE: NTS
DE APPR.		
DATE	08.08.20	

Jason Murdoch

From: Peter Hum [phum@dartaero.com]
Sent: September 22, 2008 11:01 AM
To: 'Jason Murdoch'
Cc: 'L Lacelle'; 'Mike Petsche'
Subject: RE: tri-beam mid tube

Jason,

Sorry for not getting back to you sooner. Late last week I had a look at the affected mid tubes (I think there were 5 or 6 of them).

With reference to Section Y-Y of D3391 Rev H (page 5 and 6), nominally this section is 0.70 (+0.00/-0.10) from the skidtube ends. It is acceptable (for the affected batches only) to have this depth to be 0.800" (+0.000).

Anything above 0.800", I would recommend that the part be scrapped.

Peter

From: Jason Murdoch [mailto:jmurdoch@dartaero.com]
Sent: Monday, September 22, 2008 10:47 AM
To: 'Peter Hum (E-mail)'
Cc: 'L Lacelle'
Subject: tri-beam mid tube

Hi Petey,
Have you decided weather or not the tri-beam mid-tubes are salvageable or not?
Dan P wants to know, and if they are no good I would like e-mail confirmation.
Thanks,

Jason Murdoch
Qc. Coordinator
jmurdoch@dartaero.com

NO. 174

AWS D17.1.2001
QUALIFICATION TEST RECORD

Name: Barclay Elliott
Job number: 41748
Part number: D339 1023
Description: Mid tube
Welding Process: Tig[✓] Mig[ ]
Base materiel: Aluminium
Current: AC[✓] DC[ ]

TEST REQUIREMENTS AND RESULTS

Visual:	pass[✓] fail[ ]
Penetration:	pass[✓] fail[ ]

UNACCEPTABLE

Cracks:	pass[✓] fail[ ]
Undercut:	pass[✓] fail[ ]
Pin holes:	pass[✓] fail[ ]
Overlap (cold lap)	pass[✓] fail[ ]
Porosity (surface):	pass[✓] fail[ ]
Coloration:	pass[✓] fail[ ]

Qualifier Pat Duval **Date of Test Coupon** 080924

Welder Barclay Elliott **Date of Test Coupon** 08-09-24

The above named individual is qualified in accordance with AWS D17.1.2001 to weld